

MLSHNTMMKQRQQATAIMKEVHGNVDGMDLGKKVSI PRDIMELSHLSNRGARLFKM

### human CAP-1

MLSHNTMMKQRQQATAIMKEVHGNVDGMDLGKKVSI PRDIMELSHLSNRGARLFKM  
60  
RQRRSDKYTFENFQYQSRQI NHNTIAMQNGKV DGSNLEGGSSQQAPLTPPNTDPRSPPNP  
120  
DNIA PGYSGPLKEIPPEKFENTTAVPKYYQSPWEQAI SNDPELLEALYPKLFP EGKAELP  
180  
DYRSFNRVATPGGFEKASRMVKFKVDPDFELLITDPRMSFVNPLS GRRSE NRTPKGWI  
240  
**SENIPIVITTEPTDDTTVPESEDL**

FIG. 1A

### mouse CAP-1

MLSHSAMVKQRQQASA ITKEI HGDVGMDLGKKVSI PRDIMELSHFSNRGARLFKM  
60  
RQRRSDKYTFENFQYESRAQI NHNTIAMQNGRV DGSSNLEGGSSQQGPSTPPNTDPRSPPNP  
120  
ENIA PGYSGPLKEIPPERFNTTAVPKYYRSPWEQAI GS DPELLEALYPKLFP EGKAELR  
180  
DYRSFNRVATPGGFEKASRMVKFKVDPDFELLITDPRFLAFANPLS GRRCFNRA PKGWI  
240  
**SENIPVVI TTEPTEDATVPESDL**

FIG. 1B

...  
...  
...  
...  
...

### human CAP-2

MPLSGTPAPNKKRKS KLIMELTGGQESSGLNLGKKISVPRDVMLEELSLITNRGSKMF  
60  
KLRQMRVEKFIFYENHPDVFSDDSSMDHFQKFLPTVGQLGTAGQFESYSKSNGRGGSQAGG  
120  
SGSAGQQYGSDDQQHHLGSGSGAGGTGGPAGQAGRGAAGTAGVGETGSDQAGGECKHITV  
180  
FKTYVISPWERAMGVDPQQKMELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTF  
240  
QMPKFDLGEPLLSEPLVLYNQNLSNRPSFNRTPIPWLSSGEPVVDYNVDIGIPLDGETEEL

FIG. 1C

### mouse CAP-2

MPLSGTPAPNKKRKS KLIMELTGGRESSGLNLGKKISVPRDVMLEELSLITNRGSKMF  
60  
KLRQMRVERKIFYENHPDVFSDDSSMDHFQKFLPTVGQOLETAGQGFSYKGKSSGGQAGSSG  
120  
SAGQQYGSDRHQQQGSGFGAGGSGGPGQQAGGGCAPGTVGLGEPGSGDQAGGDGKHVTVFKT  
180  
YISPWDRAAMGVDPQQKVVELGIDLLAYGAKAELPKYKSFNRTAMPYGGYEKASKRMTFQMP  
240  
KFDLGPLIISPEPLVLYNQNLSNRPSFNRTPIPWLSSGEHVVDYNVDVGIPLDGETEEL

FIG. 1D

Figure 1E shows a sequence alignment of mCAP-1 and mCAP-2. The sequences are aligned vertically, with identical residues shown in black boxes and different residues in white boxes with black outlines.

|        |                                     |   |                                   |                 |           |                 |
|--------|-------------------------------------|---|-----------------------------------|-----------------|-----------|-----------------|
| mCAP-1 | M L S H S [I]                       | M V Q R K                                   | Q Q A S A I T K E I H             | G H D V D D [I] | D M D [I] | E Q X K F V S I |
| mCAP-2 | M P L S G T P P                     | P N K R K                                   | S S K L I M E L T G G             | G R E S S E     | I N       | V               |
| mCAP-1 | F R D I V I E Y                     | H F S S H C                                 | A R L V M R R S D Y T F           | F F F F F       | - - -     |                 |
| mCAP-2 | V A N D V L I V I                   | L T H C S K M                               | M R M R V E Y                     | H P D V F S     |           |                 |
| mCAP-1 | - - - - -                           | - - - - -                                   | - - - - -                         | - - - - -       | - - - - - |                 |
| mCAP-2 | D S S M D H F Q K F L P T V G G     | [I] L T A G G                               | S R A C I N H N I A M Q N C R V D | G Q A C S S     | N L       |                 |
| mCAP-1 | E G C S - - - - -                   | [I] Q P S T P P N T P D P R S P P N P E N I | [I] D Y S C P L                   |                 |           |                 |
| mCAP-2 | S A C Q Y G S D R H                 | [I] Q S G F G A G G S G G P G G Q A G G G   | [I] A C T V C L G                 |                 |           |                 |
| mCAP-1 | K E I P P E R F N T - - -           | T A P P Y R R S P E Q                       | [I] Q I S D E L L E A             | Y               |           |                 |
| mCAP-2 | E P G S G D Q A G G D G K H V T     | [I] F T T R I D R M [I] G V D E Q Q K V E   | [I] G C Y E A G A R M T           | G               |           |                 |
| mCAP-1 | P K F F K P E G                     | R D K R R T Y V T                           | G Q F E M A T K M V K             | K V             |           |                 |
| mCAP-2 | I D L I L A Y G A                   | [I] P K K K K                               | [I] M E Y G C Y E A G A R M T     | [I] Q M E       |           |                 |
| mCAP-1 | D F E F L L T D P R F L A F A N P   | [I] G F R C F A P K G W V S E N I P         | V                                 |                 |           |                 |
| mCAP-2 | R F D H G P L L S E P L V L Y N Q N | [I] N P S T T I P A L S G E H               | [I] D D                           | D               |           |                 |
| mCAP-1 | I T T E P T E D A T V P             | S D D                                       |                                   |                 |           |                 |
| mCAP-2 | Y N V D - V G I P L D G             | T E E                                       |                                   |                 |           |                 |

FIG. 1E

### human CAP-1

FIG. 2A

## mouse CAP-1

10            20            30            40            50            60            70            80            90            100  
 ATTGGGACATGGGATGGAGGACCATGGCTTCAGGTCAGGATAAAACCCATTGGCCATAGTGCCTCATATTCCACCTTCAGTGCCTCCTCCA  
 TAAGCCGTGACCCTAGCTCCCTGGTACGGCAAGGTCAGTTCTATTTGGTAACCGGTATCACGGCAGTATAAGGTGGAAAGTCACGGAGGAGT  
 110            120            130            140            150            160            170            180            190            200  
 CAATTGGGATTCAACCCCTGGTGAAGGGCAGCTGACAGCAAGGGAACAAAAAAACTATGCTATCACATAGTGCCTATGGTGAAGCAAAGGAAACAGCAAG  
 GTTAACCTTAAGTGGGACGACTTTGGCTGGACTGTCGTTCCCTGTTGATACGATAGTGTATCACGGTACCACTTCGTTTCTGCGTTC  
 210            220            230            240            250            260            270            280            290            300  
 CATCAGCCATCAGAAGGAATCCATGGACATGATGTCACGGCATGACGGCTGGGAAAAAAGTTAGCATCCCCAGAGACATCATGATAGAAGAATTGTC  
 GTAGTCGTTAGTGCCTCTTAGGTACCTGTACTACAACCTGGTACCTGGACCCCTTTTCAATCGTAGGGGCTCTGTAGTACTATCTCTTAACAG  
 310            320            330            340            350            360            370            380            390            400  
 CCATTTCAGTAACTGTTGGGGCAGGCTGTTAAAGATGCCAAGAAAGATCTGACAAATACACCTTGAAAATTTCAGTATGAATCTAGAGCACAAATT  
 GGTAAAGTCATTAGCACCCCCGGTCCGACAAATTCTACGGCAGTTCTCTAGACTGTTATGTGGAAACTTTAAAGTCATACTTAGATCTGTGTTAA  
 410            420            430            440            450            460            470            480            490            500  
 AATCACAAATCGCCATGCCAATGGGAGACTGATGAAAGCACCTGGAAAGGTGCTCACAGCAAGGCCCTCAACTCCGCCAACACCCCCGATCCAC  
 TTAGTGTATAGCGGTACGTTACCCCTCTCAACCTTCGTTGGACCTTCCACCGACTGTCGTTGGGAGTTGAGGGGGTGTGGGGCTAGGTG  
 510            520            530            540            550            560            570            580            590            600  
 GAAGCCCCCAATCCAGAGAACATCGCACCAGGATATTCTGGACCACTGAAAGGAATTCTCTCTGAAGGTTAACAGGACGGCGCTCTAAGTACTA  
 CTTCGGGGGTTTAGGTCTCTGTAGGTGTTCTATAAGACCTGGTACTCTTCAAGGGACTTCCAAATTGTCGCTGCCCAGGATTATGAT  
 610            620            630            640            650            660            670            680            690            700  
 CGGGCTCCATGGGAGCAGGGATTGGCAGGGATCCGGAGCTCTGGAGGCTTGTACCCAAACTTTCAAGCTGAGGAAAAGCAGAAGTGGGAT  
 GCCCAGAGGTACCCCTCGTCCGTAACCGTCGCTAGGCCTCGAGGACCTCCGAAACATGGTTTGAAAGTTCGGACTTCCCTTCTGCTTGACGCCCTA  
 710            720            730            740            750            760            770            780            790            800  
 TACAGGAGCTTAAAGGGTGGCACTCATTGGAGGTTGGAAAAGCATCAAAATGGTCAAATTCAAAGTTCAGATTGAAACTACTGCTGCTGA  
 ATGTCCTCGAAATTGTCCTAACGGTGAGGTAACCTCCAAACTTTCTGTTACGTTAACGTCATAAAACTTGTATGACGACGACT  
 810            820            830            840            850            860            870            880            890            900  
 CAGATCCCGGTTCTGGCTTGCCTTCCTTGGCAGACGATGCTTAAAGGGCGCAAGGGGTGGTATCTGAGAATATCCCGTGTGAT  
 GTCTAGGGTCAAGAACCGGAAACGGTAGGGAAAAGCCCTGCTGCTACGAAATTGTCGGCTTCCCACCCCTAGACTCTTATAGGGCAGCACTA  
 910            920            930            940            950            960            970            980  
 CACAACGTGAGCTACAGAGAACGCCACTGTACCGGAATCAGATGACTGTGAGAGGGAAAGCTGGGATGCCACAGGAAGTC  
 GTGTTGACTCGGATGTCCTCGCGTGCATGGCTTAGTCTACTGGACACTCTCCCTCGACCCCTACGGTGTCTTCAG

FIG. 2B

## human CAP-2

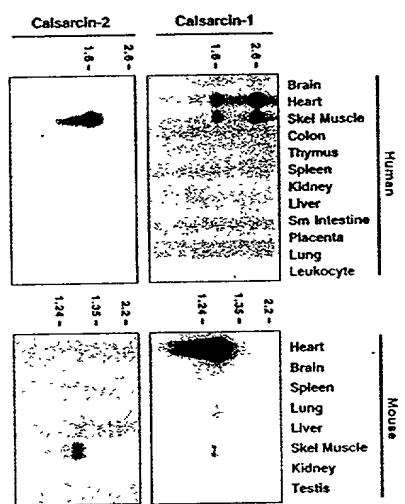
CGGTACAGC AGTCAGTCC TCCAAAGCTG CTGGACCCCA GGGAGAGCTG ACCACTCCCC GAGCACCCGG CTGAATCCAC CTCCACAATG CCGCTCTAG  
100  
GAACCCGGC CCCTAATAAG AAGAGGAAAT CCACCAAGCT GATCATGGAA CTCACCTGGAG GTGGACAGGA GAGCTCAGGC TTGAACCTGG GCAAAAGAT  
200  
CAGTGTCCA AGGGATGTGA TGTTGGAGGA ACTGTGCTG CTTACCAACC GGGGCTCAA GATGTTCAA CTGCGGCAGA TGAGGGTGGA GAAGTTATT  
300  
TATGAGAACC ACCCTCATGT TTTCTCTGAC AGCTCAATGG ATCACTTCCA GAAGTTCTT CCAACAGTGG GGGGACAGCT GGGCACAGCT GGTCAGGGAT  
400  
TCTCATACAG CAAGACCAAC GGCAGAGGGC GCAGCCAGGC AGGGGGCAGT GGCTCTGCCG GACAGTATGG CTCTGATCAG CAGCACCATC TGGGCTCTGG  
500  
GTCTGGAGCT GGGGGTACAG GTGGTCCCGC GGGCCAGGGCT GGCAGAGGGAG GAGCTGCTGG CACACAGGGG GTTGGTGAGA CAGGATCAGG AGACCAGGCCA  
600  
GGCGGAGAAG GAAAACATAT CACTGTGTTTC AAGACCTATA TTTCCCCATG GGAGCGAGCC ATGGGGGTTG ACCCCCCAGCA AAAAATGGAA CTTGGCATTG  
700  
ACCTGCTGGC CTATGGGCC AAAGCTGAAC TTCCCAAATA TAAGTCTTC AACAGGACGG CAATGCCCTA TGGTGGATAT GAGAAGGCCT CCAAACGCAT  
800  
GACCTTCCAG ATGCCCAAGT TTGACCTGGG GCCCTTGCTG AGTGAACCCC TGGTCCCTTA CAACCAAAAC CTCTCCAACA GGCTTCTTT CAATCGAAC  
900  
CCTATTCCCT GGCTGAGCTC TGGGGAGCCT GTAGACTACA ACGTGGATAT TGGCATCCCC TTGGATGGAG AAGCAGAGGA GCTGTGAGGT GTTCCCTCT  
1000  
CTGATTTGCA TCATTTCCCC TCTCTGGCTC CAATTTGGAG A

FIG. 2C

## mouse CAP-2

100  
CCCCGGGAGA GCGCACCAAC AACTGAGCAG CTGGTCAGAT CCACCTCCAC CMTGCCACGC TCAGGAACCC CGGGCCCTAA CAAGAGGAGG AAGTCAAGCA  
200  
AACTGATTAT GGAGCTCACT GGAGGTGGCC GGGAGAGCTC AGGCCTGAAC CTGGGCAAGA AGATCAGTGT CCCAAGGGAT GTGATGTTGG AGGAGCTGTC  
300  
CCTTCCTTACCAACCGAGGCT CCAAGATGTT CAAGCTACGG CAGATGGGG TGGAGAAATT TATCTATGAG AATCACCCCG ATGTTTCTC TGACAGCTCA  
400  
ATGGATCACT TCCAGAAGTT TCTTCCCACA GTGGGAGGAC AGCTGGAGAC AGCTGGTCAG GGCTTCTCAT ATGGCAAGGG CAGCAGTGGA GCCCAGGGCTG  
500  
GCAGCAGTGG CTCTGCTGGA CAGTATGGCT CTGACCGTCA TCAGCAGGGC TCTGGGTTG GAGCTGGGG TTCAGGTGGT CCTGGGGGCC AGGCTGGTGG  
600  
AGGAGGAGCT CCTGGCACAG TAGGGCTTGG AGAGCCCGGA TCAGGTGACC AGGCAGGTGG AGATGGAAA CATGTCACTG TGTTCAAGAC TTATATTCC  
700  
CCATGGGATC GGGCCATGGG GGTTGATCCT CAGCAAAAG TGGAACCTGG CATTGACCTA CTGGCATACG GTGCAAAGC TGAACCTCCC AAATAATAAGT  
800  
CCTTCACACAG GACACCAATG CCCTACGGTG GATATGAGAA GGCTCCAAA CGCATGACCT TCCAGATGCC CAAGTTGAC CTGGGGCTC TGCTGAGTGA  
900  
ACCCCTGGTC CTCTACAACC AGAACCTCTC CAACAGGCCT TCTTCAATC GAACCCCTAT TCCCTGGTIG AGCTCTGGGG ACCATGTAGA CTACAACGTG  
1000  
GATGTTGGTA TCCCCCTGGA TGGAGAGACA GAGGGCTGT GAAGTGCCTC CTCCCTGTCAT GTGCATCATT TCCCTTCTCT GGTTCCAATT TGAGAGTGG  
1100  
TGCTGGACAG GATGCCCAA CTGTTAATCC AGTATTCTTG TGGCAATGGA GGGTAAAGGG TGGGGTCCCGT TGCCTTCCCA CCCTCAAGT TCCCTGCTCCG  
AAGCATCCCT CCTCACCCAGC TCAGAGCTCC CATCCTGCTG TACCATATGG AATCTGCTCT TTTATGGAAT TTTCT

FIG. 2D



**FIG. 3**

FIG. 4A

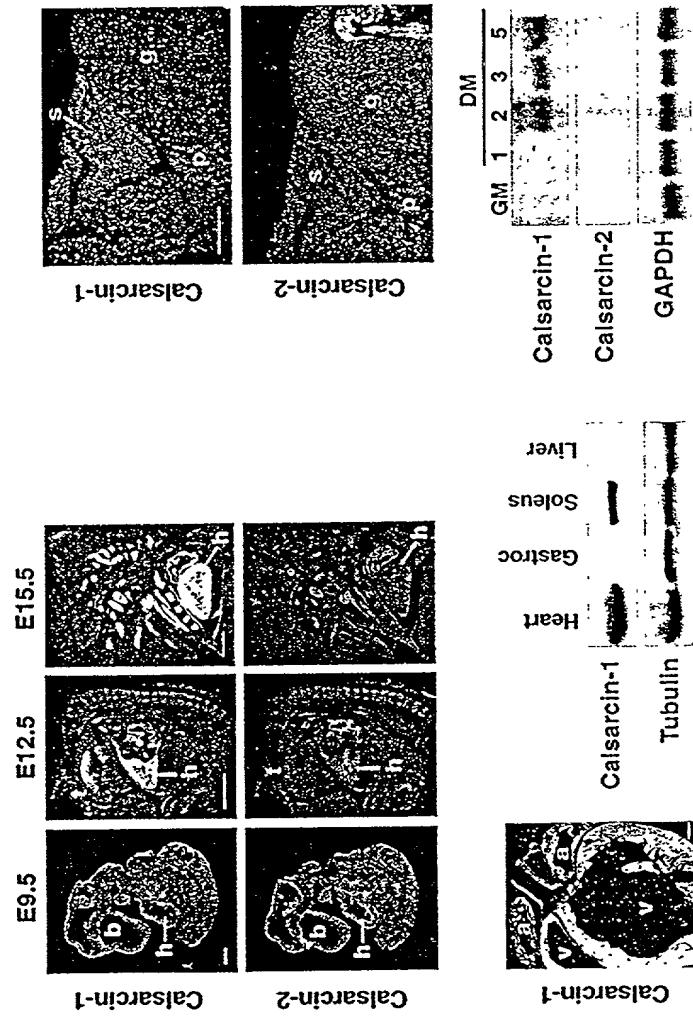


FIG. 4C

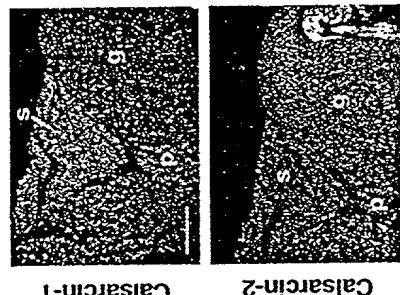


FIG. 4B

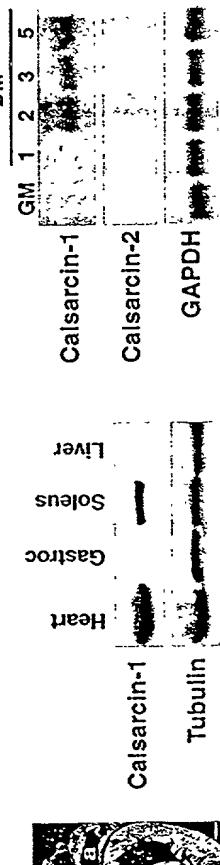


FIG. 4D

FIG. 4E

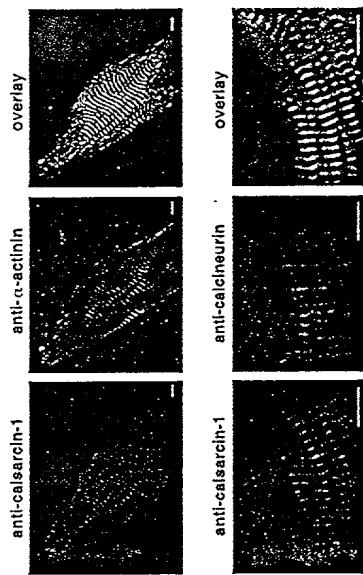
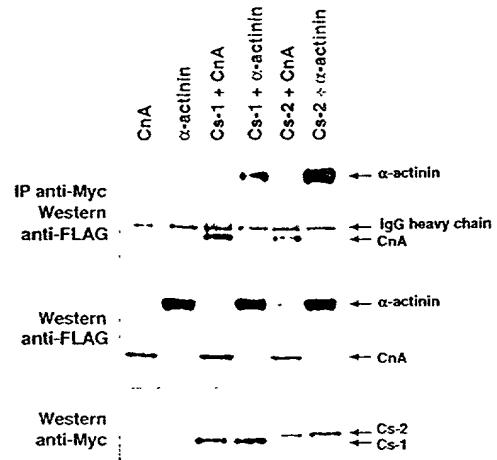


FIG. 5A

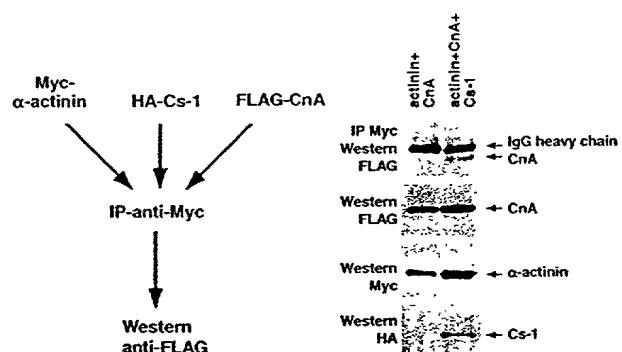


FIG. 5B

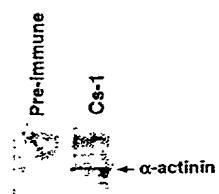
**FIG. 6A**



**FIG. 6B**



**FIG. 6C**



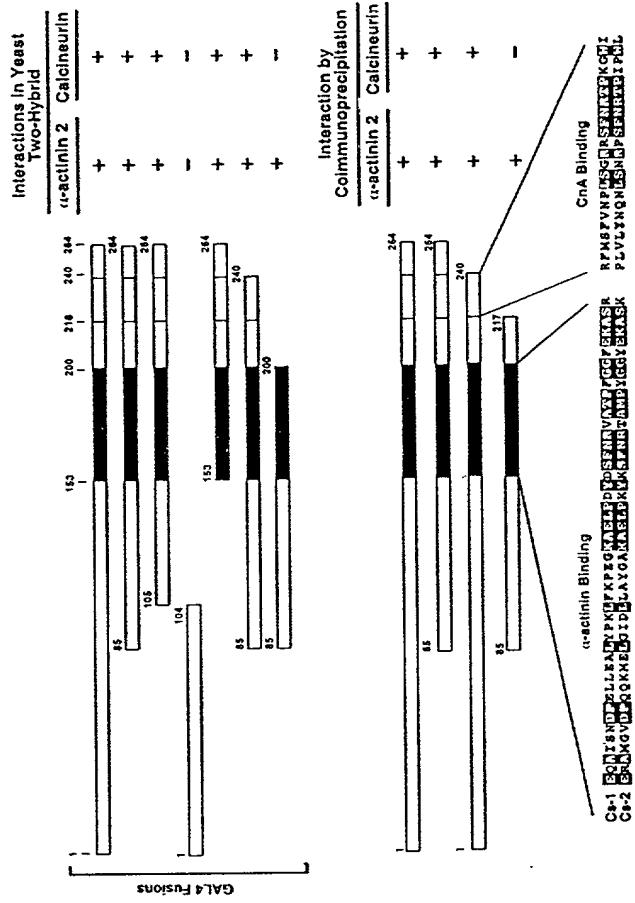


FIG. 7

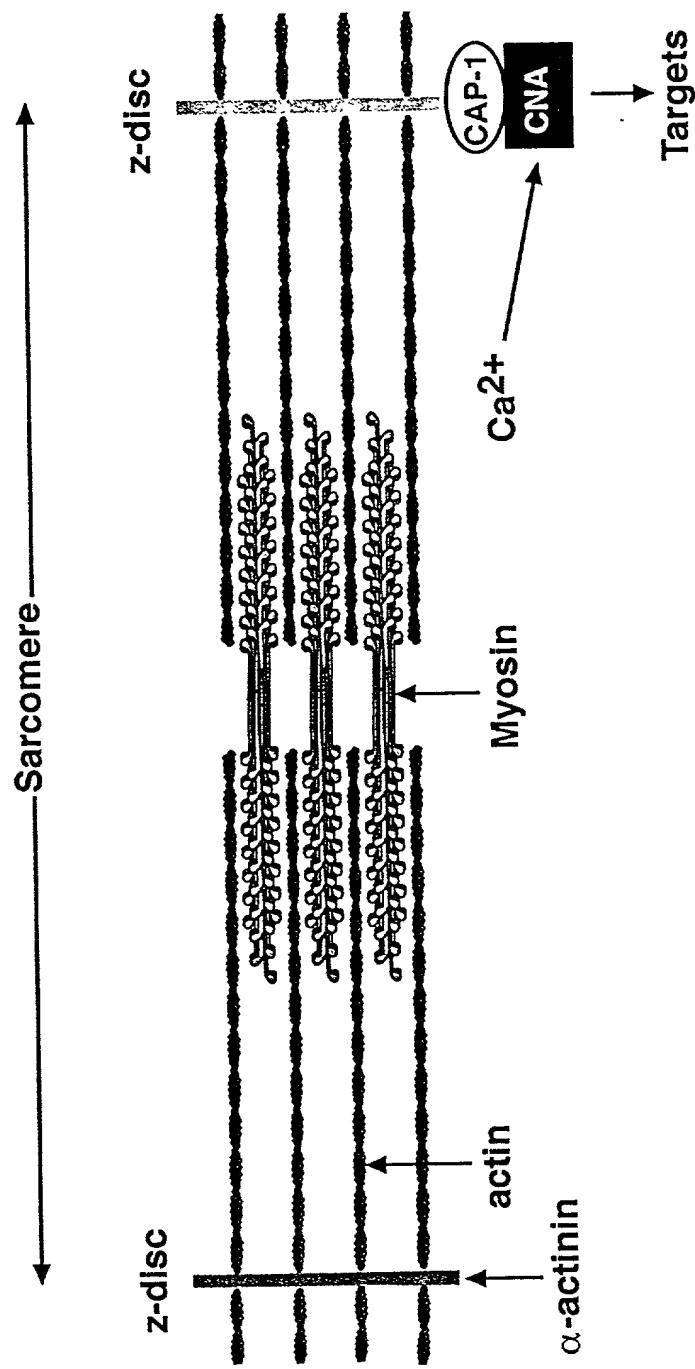


FIG. 8

### Calsarcin-3

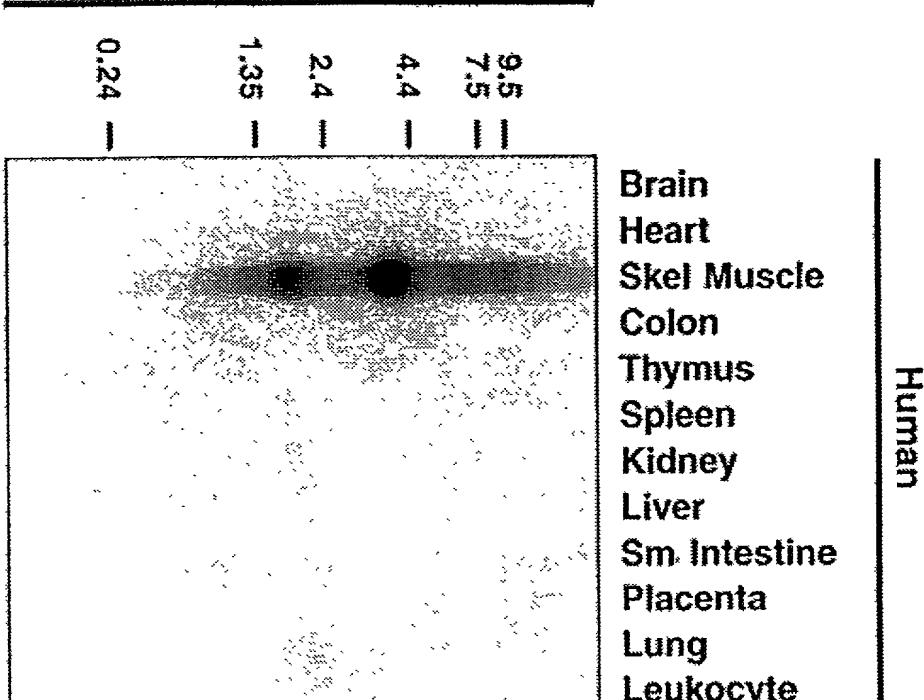


FIG. 9

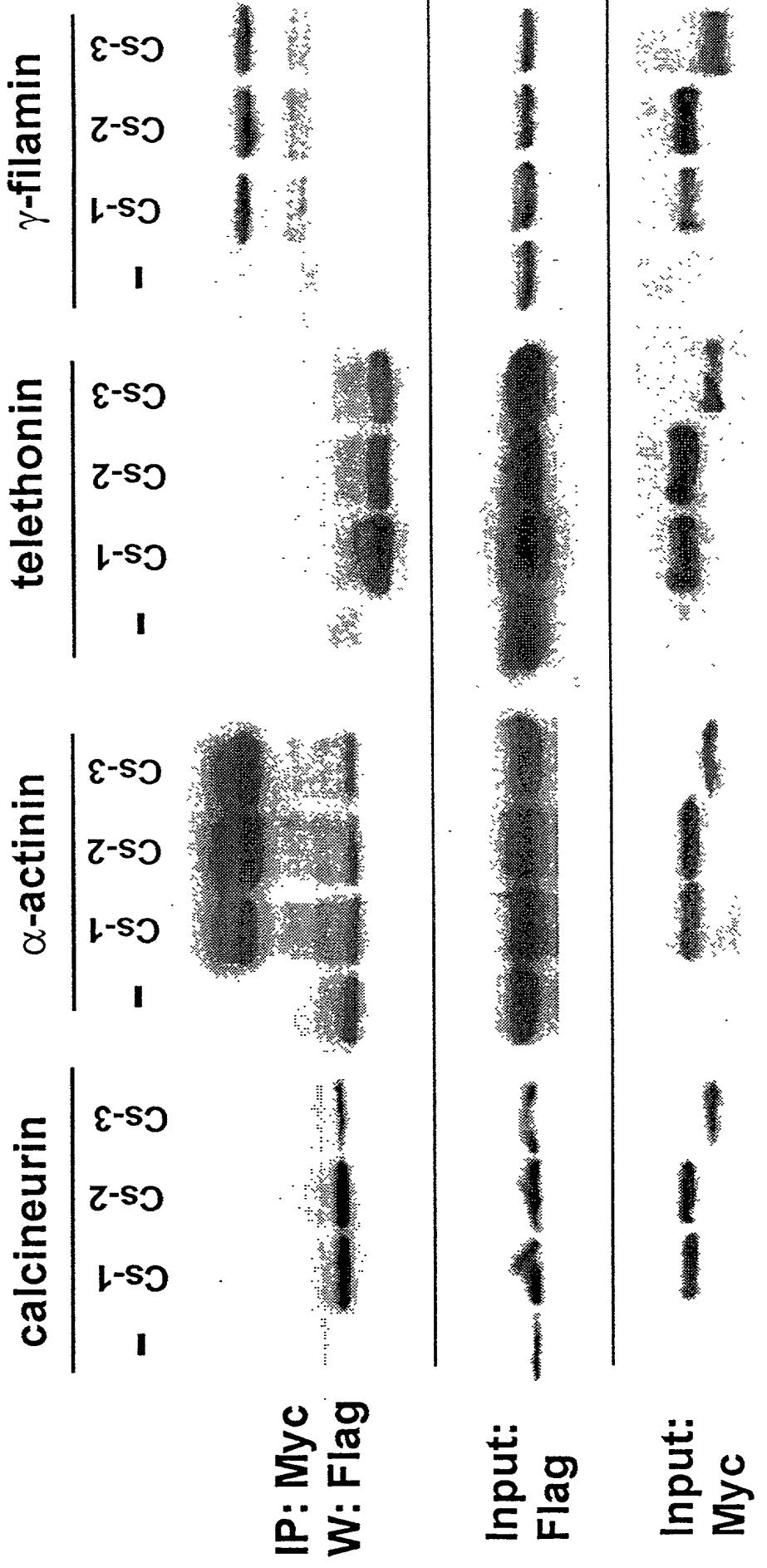
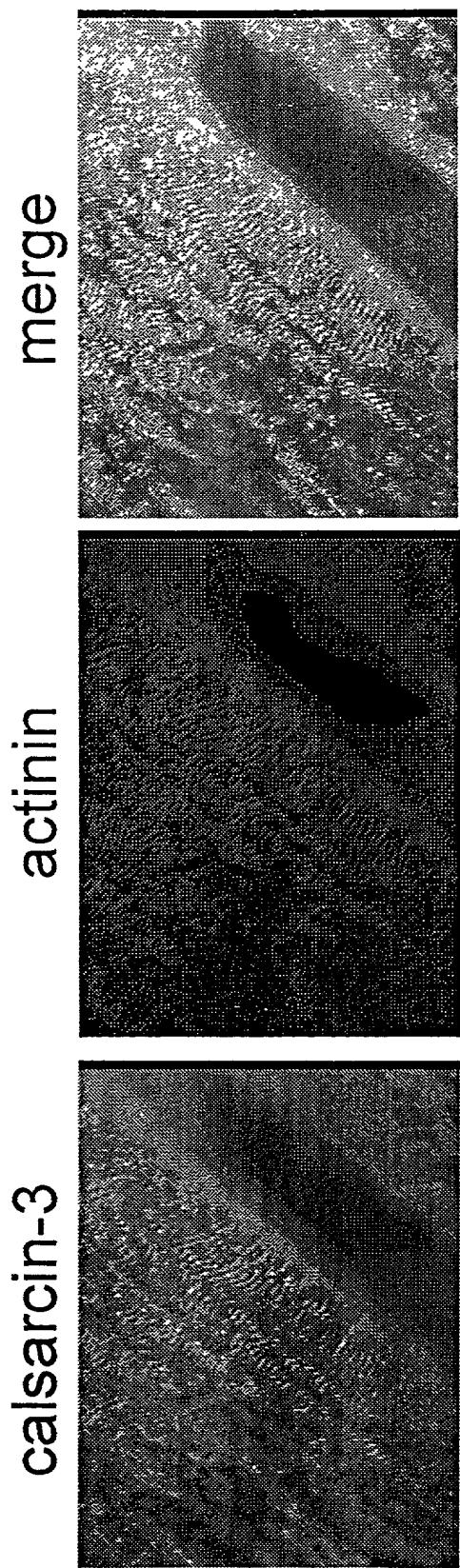
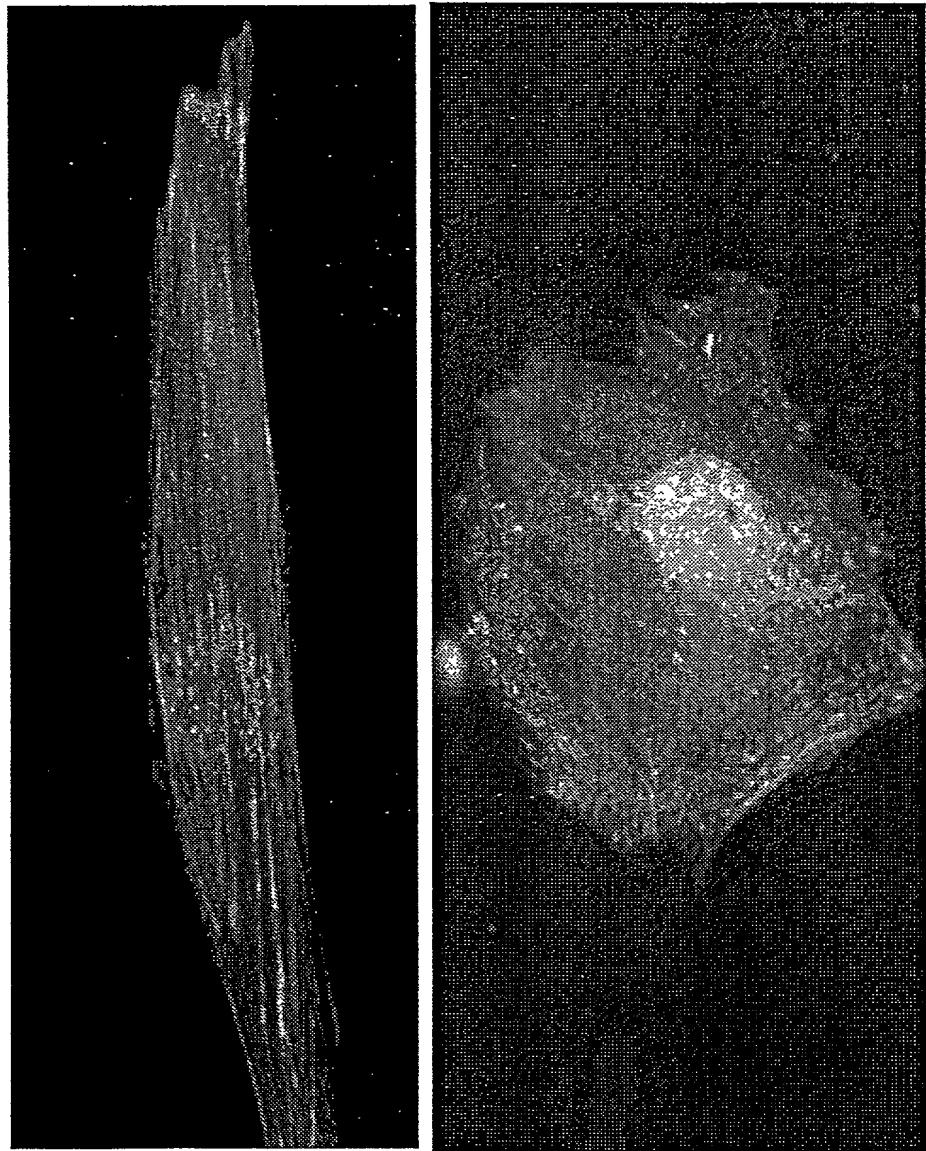


FIG. 10

FIG. 11



**FIG. 12**



ClustalW Formatted Alignments

|             |     |   |     |
|-------------|-----|---|-----|
| calsarcin-3 | 1   | N P R - . K E Q K G P V M A A M G D L T E P V P T I D L G K K * S V P Q D M E F I S L R N N R                       | 47  |
| calsarcin-2 | 1   | M P L S C T P A P N E K R S S N K E H M E T G G C S S G I N L G K K S V P R D M L F E I S L L R N R                 | 55  |
| calsarcin-1 | 1   | N L S H N T N N K O R K Q Q A F A H M K E Y H G - N D V D G M D L G K K M L E E I S H L S N R                       | 53  |
| <br>        |     |   |     |
| calsarcin-3 | 48  | G S L L F Q K R Q R R V Q K F T F F L A A S Q R A M L A G S A R R K V T G F A E S G T V A N A N G P E G P N Y       | 102 |
| calsarcin-2 | 56  | G S K M F K T R Q M R V E K F I Y E N H P D V . F S D S S M D F Q K F E P V G O G A Q G F S . Y S                   | 108 |
| calsarcin-1 | 54  | G A E L F K Y R Q R R S D K Y T F E N . . . F Q Y Q S R A Q I N H S I A M Q N G E V D . . . G . . . .               | 94  |
| <br>        |     |   |     |
| calsarcin-3 | 103 | R S E L H I F P A S P G A S L G G P E G A H P A A P A G C V P S A A A P G Y E P I L K G Y P P . . . .               | 152 |
| calsarcin-2 | 109 | K S N Q G G S Q A G G B G S G Q Y G S D Q H H L C . . . S Q S G A Q G T G P A Q Q A G K Q G A A G                   | 158 |
| calsarcin-1 | 95  | - S N L E G G S Q Q . A P L P P N T P D P K S P F N . . . P D N A A P G Y G P I K E D P P . . . .                   | 136 |
| <br>        |     |   |     |
| calsarcin-3 | 153 | • • • • E K . . . . F N H I T A P K G Y E C P W Q F S Y R D Y Q . . . . S D G R S                                   | 183 |
| calsarcin-2 | 159 | T T G V G E T T G S G D Q A G G E G K H I I V F E K T Y I S P W E R A A G V D P Q Q K M E L G I D I L L A Y G A K A | 213 |
| calsarcin-1 | 137 | . . . . E K . . . . F N T I A V P K Y Y Q S P W E Q A S N D P E L L E A L Y P K L F K P E G K A                     | 177 |
| <br>        |     |   |     |
| calsarcin-3 | 184 | H T P S P N D Y R N F N S T P P F G G P L V G G . . . . T F P R P . . . . G T P F I P E P P S G E E L L R L R       | 231 |
| calsarcin-2 | 214 | E J . P . . . K Y S F N R T A P E G G X E K A S K R M T F Q M P K F D L G P L L S E P L N Q N E S N R               | 265 |
| calsarcin-1 | 178 | E L P . . . D Y R S F N R V A T P F G G E K A S R M A X K F . . . P D F E L L L T D P R F N S P V N P L S G R       | 229 |
| <br>        |     |   |     |
| calsarcin-3 | 232 | P S F N R V A Q G W V R N L P . . . . E S . . . . E E L 251   |     |
| calsarcin-2 | 256 | P S F N R T P I P W S S G E P V D Y N V D I G I P L D G . E E E L 299   |     |
| calsarcin-1 | 230 | R S F N R T P R G W S E N I P V I T T B P T D D T T V P E S E D L 264   |     |

FIG. 13